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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/083,587	02/27/2002	Frank Wegner Donnelly	R296 0004	7426

720 7590 06/27/2003

OYEN, WIGGS, GREEN & MUTALA
480 - THE STATION
601 WEST CORDOVA STREET
VANCOUVER, BC V6B 1G1
CANADA

EXAMINER	
RO, BENTSU	
ART UNIT	**PAPER NUMBER**
2837	

DATE MAILED: 06/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N .	Applicant(s)	
	10/083,587	DONNELLY ET AL.	
	Examiner	Art Unit	
	Bentsu Ro	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 5-19* is/are rejected.

7)☒ Claim(s) *4* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

The drawings are objected to because in Fig. 1, the box 20_1 is a "power source voltage sensing", not a "power source current sensing", see specification page 4, line 16.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Nowick US Patent No. 3,970,160 or Kumar US Patent No. 5,998,880.

Nowick's Fig. 2 shows a method and an apparatus of controlling power provided from a power source *(the battery 277)* to a plurality of direct current traction motors *(the left traction motor 124 and the right traction motor 120 of an electrically powered mobile vehicle; the motors are dc synchronous motors, see column 2, lines 10-14)* providing an individual chopper circuit for each traction motor *(the power switches 281, 285, 289, 293*

are chopper switches, wherein, power switches 281 and 285 are used for the right motor 120 and power switches 289 and 293 are used for the left motor 124).

Kumar Fig. 1 shows traction motors M_1 through M_N, each motor has its own inverter (or chopper circuit) INV_1 through INV_N, respectively.

In the text, Kumar calls the motor M as an AC traction motor, however, the motor is supplied from a dc power source via an inverter, therefore, it is technically a dc motor. Further, all motors require a rotating magnetic field, therefore, the power supplied to the motor must be ac-type regardless of the type of motors (ac motor or dc motor). Still further, an inverter can be used to drive an ac motor such as an induction motor or a dc motor such as a brushless dc motor.

Claims 2, 3, 5-19 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Kumar.

Regarding claims 2, 7, 8, 10, 11, Kumar's Fig. 1 circuit includes:

- A controller 26 (a microcomputer, see column 5, line 64) is a means for determining power requirement for each motor (see column 2, lines45-48); the power is determined by successive time intervals because the controller 26 controls all function of the vehicle, the controller can do one job at a time, the power determination is one of the plurality of jobs;
- The controller 26 is also a means for determining the necessary voltage and pulse width to achieve the desired power for each motor (see column 2, lines 49-53, specifically, the power supplied to the dc link at that time interval is a desired power for that motor);

- The inverters 15 is a means for sequentially pulsing power to each motor.

Regarding claim 3, Kumar's control is a sequential control method using serial data link, therefore, the pulses cannot overlap.

Regarding claim 5, Kumar's circuit includes a maximum current circuit, which is an over-current protection circuit.

Regarding claim 6, during deceleration, the power can be reduced. This is a conventional power control.

Regarding claim 9, the internal clock of the microcomputer 26 is used for all clocking signal, including the PWM power control, see column 6, lines 8-9 for the clock signal.

Regarding claim 12, Kumar's Fig. 1 includes a throttle 27 inputting signal to the controller 26.

Regarding claims 13 and 14, see column 2, lines 55-56 for measurement of voltage and current.

Regarding claims 15 and 16, Kumar's column 7, lines 14-15 teach a slew rate limit circuit, which is a "ramping device" and/or a "detection signal scaling device".

Regarding claim 17, Kumar's column 7, line 14 clearly states a "power deration circuit".

Regarding claim 18, the inverters 15 can be made from transistors, SCRs, IGBTs, MOSFETs, GTOs, etc., which are well established art.

Regarding claim 19, see column 9, lines 55-56 for the failure of "shoot-through".

Allowable Subject Matter

Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Examiner's Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bentsu Ro whose telephone number is (703) 308-3656. The examiner can normally be reached on Mon-Fri, 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Nappi can be reached on (703) 308-3370. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0658.

Bentsu Ro
Senior Examiner
Art Unit 2837

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June 23, 2003